

Modules

Jin Guojun

Lawrence Berkeley National Laboratory

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What is Modules

The Modules package provides for the dynamic modification of a user's environment via modulefiles.

Each modulefile contains the information needed to configure the shell for an application. Once the Modules package is initialized, the environment can be modified on a per-module basis using the module command which interprets modulefiles. Typically modulefiles instruct the module command to alter or set shell environment variables such as PATH, MANPATH, etc. modulefiles may be shared by many users on a system and users may have their own collection to supplement or replace the shared modulefiles.

About Module

In distributed computing with centralized file server environment, commonly used utility tools are required by a set of user machines. In order to reduce sys-admin load, tools is preferred to be installed on the central server.

Advantage:

- Easy to administrate
 - Reduce installation
 - Reduce maintenance
- Transparent to users
- Avoid conflict if multiple versions exist
 - User may wonder why it work yesterday, but not today

Disadvantage:

- No one can use if the central server is down

Infrastructure of Module

```
dir Modules/
total 4
drwxr-xr-x 2 jin bin 512 Aug 30 1999 bin/
drwxr-xr-x 2 jin bin 512 Jul 10 1996 init/
drwxr-xr-x 2 jin bin 512 Jul 24 1998 modulefiles/
drwxr-xr-x 2 jin bin 512 Aug 6 1997 modulefiles-arch/
```

Modules/bin:

total 617

```
-r-xr-xr-x 1 jin bin 220 Aug 30 1999 modulecmd*
-r-xr-xr-x 1 jin bin 180283 Aug 17 1995 modulecmd-2.2*
-r-xr-xr-x 1 jin bin 425716 Aug 2 1999 modulecmd-3.x*
```

Modules/init:

total 7

```
-rw-r--r-- 1 jin bin 318 Aug 17 1995 bash
-rw-r--r-- 1 jin bin 720 Aug 6 1997 csh
-r--r--r-- 1 jin bin 757 Apr 21 1994 ksh
-rw-r--r-- 1 jin bin 339 Aug 17 1995 perl
-rw-r--r-- 1 jin bin 385 Dec 15 1995 sh
-rw-r--r-- 1 jin bin 649 Aug 6 1997 tcsh
-rw-r--r-- 1 jin bin 315 Aug 17 1995 zsh
```

Modules/modulefiles:

total 10

```
-rw-r--r-- 1 jin bin 321 Aug  6 1997 XDesigner  
-rw-r--r-- 1 jin bin 548 Mar 24 1999 communicator  
-rw-r--r-- 1 jin bin 619 Feb 16 1995 fm2html  
-rw-r--r-- 1 jin bin 326 Aug 14 1995 frame  
-rw-r--r-- 1 jin bin 326 Aug 14 1995 frame4  
-rw-r--r-- 1 jin bin 329 Aug 14 1995 frame5  
-rw-r--r-- 1 jin bin 535 Oct  1 1998 hips  
-rw-r--r-- 1 jin bin 444 Nov 16 1998 java  
-rw-r--r-- 1 jin bin 560 May  4 1998 java-1.1.5  
-rw-r--r-- 1 jin bin 418 Oct 28 1997 photoshop
```

Modules/modulefiles-arch:

total 3

```
-rw-r--r-- 1 jin bin 428 Sep 18 1999 DPSS  
-rw-r--r-- 1 jin bin 537 Jul 25 1995 XIL.solaris  
-rw-r--r-- 1 jin bin 372 Mar 23 1995 ez
```

How users use Modules

Check and set up environment for modules:

```
if ($?LOADEDMODULES == 0)
    setenv MODULESHOME      /usr/local/Modules
    if (-d $MODULESHOME/init)      source $MODULESHOME/init/$shell
endif
```

Load modules:

```
module load module-name(s)
```

for example

```
module load frame-5.5 gcc-2.9.5
```

Create A Module File

```
#%Module2.2
## communicator (netscape)
##
# See the file 'module.keys' for hints on choosing keys
#key:communicator:netscape:push:internet

if [module-info mode display] {
    puts stderr "Netscape communicator with push tech.\n"
    puts stderr "if JAVA fails (core dump), please try folowings:"
    puts stderr "move .xinitrc to x.xinitrc and restart X and netscape"
    puts stderr "the JAVA should work, then move .xinitrc back again\n"
}
set mozilla_home      /usr/local/netscape
setenv MOZILLA_HOME $mozilla_home

prepend-path PATH      $mozilla_home
```

More Module File

```
#%Module1.0
##
## JAVA packages (JDK 1.1.5 & GUJAVA 1.0)
##
#key:java:lang:internet

if [module-info mode display] {
    puts stdout "\n      echo Java lang package:"
    puts stdout "\n      This packages contains JDK 1.1.5 and GUJAVA 1.0\n"
}
set java_home /usr/local/jdk1.1.5
setenv JAVAHOME $java_home

prepend-path PATH      $java_home/bin
prepend-path CLASSPATH .:$java_home/lib/classes.zip
```

More module user commands

Find out what modules are available:

```
%module avail
```

```
----- /usr/local/Modules/modulefiles -----
XDesigner    fm2html    frame4    hips      java-1.1.5
communicator frame      frame5    java      photoshop
ModuleCmd_Avail.c(1365):ERROR:157: Invalid cache version 'v3.1.6' found
```

```
----- /usr/local/Modules/modulefiles-arch -----
DPSS        XIL.solaris ez
```

Knowing Module Content

```
%module show java-1.1.5
```

```
/usr/local/Modules/modulefiles/java-1.1.5:
```

```
setenv      JAVAHOME /usr/local/jdk1.1.5
prepend-path PATH /usr/local/jdk1.1.5/bin
prepend-path CLASSPATH .:/usr/local/jdk1.1.5/lib/classes.zip
```

```
Java lang package: This packages contains JDK 1.1.5 and GUJAVA 1.0
```

```
% module show communicator
```

```
/usr/local/Modules/modulefiles/communicator:
```

Netscape communicator with push tech.

if JAVA fails (core dump), please try folowings:

move .xinitrc to x.xinitrc and restart X and netscape

the JAVA should work, then move .xinitrc back again

```
setenv      MOZILLA_HOME /usr/local/netscape
```

```
prepend-path  PATH /usr/local/netscape
```

What Modules are Loaded and How to Unload Modules

```
% module load frame5
```

```
% module list
```

Currently Loaded Modulefiles:

- 1) communicator 2) frame5

```
% module unload frame5
```

```
% module list
```

Currently Loaded Modulefiles:

- 1) communicator

Current release

<http://modules.sourceforge.net/>

03-Jan-2002

modules-3.1.6 released (ChangeLog)

18-Aug-2001

modules-3.1.5 released

03-Aug-2001

modules-3.1.4 released

11-Jul-2001

modules-3.1.3 released

Where to find the source code :

http://sourceforge.net/project/showfiles.php?group_id=15538